

I/WE CLAIM:

1. A wellhead system for stimulating and extracting subterranean hydrocarbons from a low-pressure well, the system comprising:
a plurality of tubular heads independently secured by threaded unions, each tubular head supporting a mandrel for suspending a tubular string in the well, each mandrel being secured to the tubular head by a threaded union.
2. The wellhead system as claimed in claim 1 comprising two independent tubular heads separated by a mandrel.
3. The wellhead system as claimed in claim 1 wherein each threaded union comprises a nut.
4. The wellhead system as claimed in claim 3 wherein the nut is one of a wring nut, a spanner nut and a hammer union.
5. The wellhead system as claimed in claim 1 wherein the tubular strings suspended by the mandrels are concentrically disposed within a surface casing suspended by a wellhead, the wellhead being supported by a conductor assembly dug into the earth.
6. The wellhead system as claimed in claim 1 comprising:
a casing mandrel threadedly secured to a wellhead, the wellhead securing and suspending a surface casing;

a tubing head spool threadedly secured to the casing mandrel, the casing mandrel securing and suspending a production casing; and

a tubing hanger threadedly secured to the tubing head spool, the tubing hanger securing and suspending a production tubing.

7. The wellhead system as claimed in claim 6 further comprising an adapter flange threadedly secured to the tubing hanger, the adapter flange having an upper flange for connecting to a flow-control device.
8. The low-pressure wellhead system comprising:
an independent screwed wellhead having independently secured tubular heads for supporting respective tubular strings in a well bore; and
a plurality of threadedly secured mandrels supported by the tubular heads, the mandrels securing and suspending the tubular strings in the well bore.
9. The wellhead system as claimed in claim 8 comprising a first tubular head and a second tubular head, a first mandrel located between the first and second tubular heads and a second mandrel supported above the second tubular head.
10. The wellhead system as claimed in claim 9 wherein:
the first tubular head is a wellhead that secures and suspends a surface casing in the well bore;
the first mandrel is a casing mandrel that secures and suspends a production casing in the well bore;

the second tubular head is a tubing head spool supporting the second mandrel at an upper end of the tubing head spool; and

the second mandrel is a tubing hanger that secures and suspends a production tubing in the well bore.

11. The wellhead system as claimed in claim 8 wherein the tubular heads and mandrels are secured by threaded unions.

12. The wellhead system as claimed in claim 11 wherein the threaded unions are one of a wring nut, a spanner nut and a hammer union.

13. A method of completing a low-pressure well comprising steps of:

securing a first mandrel to a first tubular head using a first threaded union, the first tubular head supporting a first tubular string in the well, and the first mandrel supporting a second tubular string in the well;

securing a second tubular head to the first mandrel using a second threaded union; and

securing a second mandrel to the second tubular head using a third threaded union, the second mandrel supporting a third tubular string in the well.

14. The method as claimed in claim 13 further comprising a step of securing an adapter flange to the second mandrel using a fourth threaded union.

15. The method of completing a low-pressure well after a conductor assembly has been installed in the ground above a subterranean hydrocarbon formation, the method comprising steps of:

landing a wellhead onto the conductor assembly, the wellhead securing and suspending a surface casing in the well;

securing a casing mandrel to the wellhead using a first threaded union, the casing mandrel securing and suspending a production casing in the well;

securing a tubing head spool to the casing mandrel using a second threaded union; and

securing a tubing hanger to the tubing head spool using a third threaded union, the tubing hanger securing and suspending a production tubing in the well.

16. The method as claimed in claim 15 further comprising the step of securing an adapter flange to the tubing hanger using a fourth threaded union.

17. The method as claimed in claim 15 further comprising steps of:

after the step of securing the casing mandrel to the wellhead, securing a frac stack to the casing mandrel using a fourth threaded union, the frac stack having conduits for conveying proppants and pressurized fluids into the production casing for fracturing the subterranean hydrocarbon formation; and

prior to the step of securing the tubing head spool to the casing mandrel, removing the frac stack from the casing mandrel.

18. The method as claimed in claim 17 wherein the step of securing the frac stack using the fourth threaded union further comprises the steps of:

securing a frac stack adapter flange to the underside of the frac stack; and

securing an adapter pin to the casing mandrel, the adapter pin having pin threads for engaging box threads of the frac stack adapter flange.

19. A method of installing and completing a low-pressure wellhead system for the extraction of hydrocarbons from a subterranean hydrocarbon formation, the method comprising the steps of:

digging away earth above the subterranean hydrocarbon formation to accommodate a conductor;

installing a conductor window on the conductor;

running surface casing until a wellhead is seated above the conductor;

cementing the surface casing in place;

removing the conductor window to expose the wellhead;

mounting a blowout preventer and drilling flange to the wellhead using a first threaded union;

inserting a test plug into the wellhead system to test a pressure-integrity of the wellhead system;

removing the test plug after the testing of the pressure-integrity of the wellhead is complete;

installing a wear bushing in the drilling flange;
drilling a bore to accommodate a production casing;
running in the production casing until a casing
mandrel connected to a top end of the production
casing is seated in a casing bowl of the
wellhead;
cementing in the production casing;
removing the blowout preventer and drilling flange;
securing the casing mandrel to the wellhead using a
second threaded union;
securing a tubing head spool to the casing mandrel
using a third threaded union;
running in a production tubing until a tubing hanger
is seated in the tubing head spool; and
securing the tubing hanger to the tubing head spool
using a fourth threaded union.

20. The method as claimed in claim 19 further comprising
a step of securing an adapter flange to the tubing
hanger using a fifth threaded union.

21. The method as claimed in claim 20 further comprising
a steps of:

after the step of securing the casing mandrel to the
wellhead, securing a frac stack to the casing
mandrel using a fifth threaded union, the frac
stack having conduits for conveying proppants and
pressurized fluids into the production casing for
fracturing the subterranean hydrocarbon
formation; and

prior to the step of securing the tubing head spool
to the casing mandrel, removing the frac stack
from the casing mandrel.